

(b) *Wetness*: (1) Spaces where Class 1 (explosive) materials are stowed below deck must be dry. In the event of the contents of packages being affected by water when on board immediate advice must be sought from the shippers; pending this advice handling of the packages must be avoided.

(2) Bilges and bilge sections must be examined and any residue of previous cargo removed before Class 1 materials (explosive) are loaded onto the vessel.

(c) *Security*: All compartments, magazines, and cargo transport units containing Class 1 (explosive) materials must be locked or suitably secured in order to prevent unauthorized access.

(d) *Secure stowage*: Class 1 (explosive) materials must be securely stowed to prevent shifting in transit; where necessary, precautions must be taken to prevent cargo sliding down between the frames at the ship's sides.

(e) *Separation from accommodation spaces and machinery spaces*: (1) Class 1 (explosive) materials must be stowed as far away as practicable from any accommodation spaces or any machinery space and may not be stowed directly above or below such a space. The requirements in paragraphs (e)(2) through (e)(4) of this section are minimum requirements in addition to the applicable requirements of 46 CFR chapter I. Where the requirements of this subpart are less stringent than those of 46 CFR chapter I, the 46 CFR chapter I requirements must be satisfied for ships to which they are applicable.

(2) There must be a permanent A Class steel bulkhead between any accommodation space and any compartment containing Class 1 (explosive) materials. Division 1.1, 1.2, 1.3, or 1.5 materials may not be stowed within 3 m (10 feet) of this bulkhead; in the decks immediately above or below an accommodation space they must be stowed at least 3 m (10 feet) from the line of this bulkhead projected vertically.

(3) There must be a permanent A Class steel bulkhead between a compartment containing Class 1 (explosive) materials and any machinery space. Class 1 (explosive) materials, except those in Division 1.4 (explosive), may not be stowed within 3 m (10 feet) of

this bulkhead; and in the decks above or below the machinery space they must be stowed at least 3 m (10 feet) from the line of this bulkhead projected vertically. In addition to this separation, there must be insulation to Class A60 standard as defined in 46 CFR 72.05-10(a)(1) if the machinery space is one of Category 'A' unless the only Class 1 (explosive) materials carried are in Division 1.4S (explosive).

(4) Where Class 1 (explosive) materials are stowed away from bulkheads bounding any accommodation space or machinery space, the intervening space may be filled with cargo that is not readily combustible.

(f) *Under deck stowage of Class 1 (explosive) materials allocated stowage categories 09 and 10*:

(1) These Class 1 (explosive) materials must not be stowed in the same compartment or hold with other cargo that is readily combustible (such as items packaged in straw).

(2) The position of stowage of these Class 1 (explosive) materials must be such as to maintain direct access to the hatchway by not overstowing with other cargo except for other Class 1 (explosive) materials.

(3) In all cases, all cargo within the compartment or hold, including Class 1 (explosive) materials stowed in cargo transport units, must be secured so as to eliminate the possibility of significant movement. Where an entire deck is used as a magazine, the stowage must be so arranged that the Class 1 (explosive) materials stowed therein must be removed from the ship before working any cargo in any decks above or below the space in the same hold.

[Amdt. 176-30, 55 FR 52696, Dec. 21, 1990, as amended at 66 FR 45384, 45385, Aug. 28, 2001; 69 FR 76183, Dec. 20, 2004; 68 FR 61942, Oct. 30, 2003]

§ 176.118 Electrical requirement.

(a) Electrical equipment and cables installed in compartments in which Class 1 (explosive) materials are stowed which do not need to be energized during the voyage must be isolated from the supply so that no part of the circuit within the compartment is energized. The method of isolation may be by withdrawal of fuses, opening of

§ 176.120

switches or circuit breakers, or disconnection from bus bars. The means, or access to the means, of disconnection/reconnection must be secured by a locked padlock under the control of a responsible person.

(b) Electrical equipment and cables in a cargo space in which Class 1 (explosive) materials are stowed which are energized during the voyage for the safe operation of the ship must meet the requirements of subchapter J of 46 CFR chapter I. Before Class 1 (explosive) materials are loaded aboard a vessel, all cables must be tested by a skilled person to ensure that they are safe and to determine satisfactory grounding, insulation resistance, and continuity of the cable cores, metal sheathing or armoring.

(c) All Class 1 (explosive) materials must be stowed in a safe position relative to electrical equipment and cables. Additional physical protection must be provided where necessary to minimize possible damage to the electrical equipment or cables, especially during loading and unloading.

(d) Cable joints in the compartments must be enclosed in metal-clad junction boxes.

(e) All lighting equipment and cables must be of the fixed type, and must meet the relevant inspection, test, and installation standards of 46 CFR chapter I, subchapter J.

[Amdt. 176-30, 55 FR 52696, Dec. 21, 1990, as amended by Amdt. 176-34, 58 FR 51533, Oct. 1, 1993]

§ 176.120 Lightning protection.

A lightning conductor grounded to the sea must be provided on any mast or similar structure on a vessel on which Class 1 (explosive) materials are stowed unless effective electrical bonding is provided between the sea and the mast or structure from its extremity and throughout to the main body of the hull structure. (Steel masts in ships of all welded construction comply with this requirement).

§§ 176.122–176.124 [Reserved]

§ 176.128 Magazine stowage types “A”, “C” and Special Stowage.

(a) The stowage arrangements of Class 1 (explosive) substances and cer-

49 CFR Ch. I (10–1–11 Edition)

tain articles are subject to varying levels of containment, (except for compatibility group S substances), when stowed below deck. The levels are dependent on the hazard presented and the nature of the particular explosives involved. Columns (10A) and (10B) of the Hazardous Materials Table specify the stowage applicable to each substance or article. The different levels of containment are defined below as “A”, “C” and “Special”.

(b) *Magazine stowage type “A”*. Magazine stowage type A is required for those substances that must be kept clear of steelwork.

(c) *Magazine stowage type “C”*. Magazine stowage type C is required for those substances in compatibility group A.

(d) *Special Stowage*. Special Stowage is required for Explosive substances, n.o.s. in compatibility groups G or L, and for articles in compatibility groups G, H, L and K, which are particularly hazardous.

[69 FR 76183, Dec. 20, 2004]

§ 176.130 Magazine stowage Type A.

(a) In addition to protecting the Class 1 (explosive) materials and preventing unauthorized access, magazine stowage type A guards against friction between any spilled contents of packages and the vessel’s sides and bulkheads.

(b) Class 1 (explosive) materials requiring magazine stowage type A must be stowed in a magazine which is tightly sheathed with wood on its inner sides and floor.

(c) When utilized as part of the magazine structure, the vessel’s sides and bulkheads must be clean, free from rust or scale, and protected by battening or sweatboards spaced not more than 150 mm (6 inches) apart. All stanchions and other unprotected structural members must be similarly clean and battened. The underside of the deck above the magazine must be clean and free of rust and scale, but need not be battened.

(d) The top of the stow within the magazine must be at least 30 cm (12 inches) from the underside of the deck above.